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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,459	01/27/2004	Kiruba Sivasubramaniam	136236 (1306-50)	3184

7590 01/13/2005

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EXAMINER	
LAM, THANH	

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/766,459	SIVASUBRAMANIAM ET AL.	
	Examiner	Art Unit	
	Thanh Lam	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) *21-24* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species A, figures 1-2,4, claims 1-20 in the reply filed on 10/13/2004 is acknowledged. The traversal is on the ground(s) that the search and examination of claims 1-24 can be made without serious burden because of the closely related nature of I (Claims 1-20) and II (claims 21-24). Accordingly. This is not found persuasive because inventions claimed of Group I is a final product is distinct from Group II that is a process of making, and they are different in classification and search.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Emery (US 6,624,547).

Regarding claim 1, Emery discloses a winding of an electric machine comprising: at least one series of serially connected AC bars, each AC bar comprising: a series of serially connected turns formed by litz wire having a plurality of strands (22), and at least one cooling tube (30), wherein individual strands of the plurality of strands are respectively positioned substantially adjacent to the at least one cooling tube at at least

one transfer point for providing heat transfer from the respective individual strands to the at least one cooling tube.

Regarding claim 2, Emery discloses heat is further transferred along the respective individual strands along the direction of a longitudinal axis of the respective individual strands.

Regarding claim 3, Emery discloses a surface area of individual turns of the series of turns is positioned substantially adjacent to a respective surface area of the at least one cooling tube for establishing respective heat transfer areas, wherein each respective heat transfer area includes a plurality of transfer points.

Regarding claim 4, Emery discloses each turn is positioned for establishing a respective heat transfer area.

Regarding claim 5, Emery discloses the at least one cooling tube is formed of stainless steel.

Regarding claim 6, Emery discloses the series of turns includes a first and second of turns wherein the first group of turns is substantially symmetrically arranged with respect to the second group of turns.

Regarding claim 7, Emery discloses the first and second groups of turns are symmetrically arranged around the at least one cooling tube.

Regarding claim 8, Emery discloses the at least one cooling tube has first and second opposing surfaces, and wherein heat transfer areas are established along the first and second opposing surfaces.

Regarding claim 9, Emery discloses the series of turns is insulated with a

thermally activated adhesive.

Regarding claim 10, Emery discloses the series of turns is formed by winding the litz wire into a coil including the series of turns, insulating the coil with a thermally activated adhesive, shaping the coil into a predetermined shape, all at ambient temperature, and then heating the coil for curing the adhesive.

Regarding claim 11, Emery discloses the series of turns is formed by winding the litz wire into a coil including the series of turns, shaping the coil into a predetermined shape, and epoxy impregnating the coil.

Regarding claim 12, Emery discloses an electric machine having an AC winding comprising: at least one series of serially connected AC bars, each AC bar comprising: a series of serially connected turns formed by litz wire having a plurality of strands (22); and at least one cooling tube (30), wherein individual strands of the plurality of strands are respectively positioned substantially adjacent to the at least one cooling tube at at least one transfer point for providing heat transfer from the respective individual strands to the at least one cooling tube.

Regarding claim 13, Emery discloses a winding of an electric machine comprising: at least one series of serially connected AC bars, each AC bar comprising: a series of serially connected turns including at least one conductor, at least one cooling tube (30) having a cooling medium flowing through a conduit having a thermally conductive surface; and a phase to ground insulation (enclosed of 22 and 30) for providing electrical phase to ground insulation for the AC bar, wherein the phase to ground insulation surrounds the series of serially connected turns and the at least one

cooling tube; wherein respective turns of the series of turns contact the at least one cooling tube for transferring heat from the respective turns to the at least one cooling tube, wherein at each point of contact the phase to ground insulation does not intervene between the conductive surface of the at least one cooling tube and a respective conductor of the at least one conductor.

Regarding claim 14, Emery discloses the at least one cooling tube has a floating voltage potential.

Regarding claim 15, Emery discloses the floating voltage potential is within the range of a turn-to-turn voltage of the series of turns.

Regarding claim 16, Emery discloses the at least one cooling tube is electrically insulated with a film insulation of thickness not substantially greater than a minimum thickness for withstanding a maximum voltage difference between turns of the series of turns that contact the at least one cooling tube.

Regarding claim 17, Emery discloses the at least one cooling tube is coated with a thermally activated adhesive.

Regarding claim 18, Emery discloses at each point of contact a maximum amount of insulation intervening between the conductive surface and the at least one conductor includes at least one film insulator having a collective thickness substantially smaller than a thickness of the phase to ground insulation.

Regarding claim 19, Emery discloses each turn included in the AC bar contacts the at least one cooling tube for transferring heat from the respective turn to the at least one cooling tube.

Regarding claim 20, Emery discloses the at least one cooling tube has first and second opposing surfaces, and wherein turns of the series of turns contact the at least one cooling tube along the first and second opposing surfaces.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh Lam whose telephone number is (571) 272-2026. The examiner can normally be reached on t-f 9-7.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren E Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thanh Lam
Primary Examiner
Art Unit 2834

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